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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2851  
Examiner: Hung Nguyen  
Confirmation No.: 6971

In Re PATENT APPLICATION of:

Applicant(s): Ryoichi AOYAMA et al.

Serial No.: 10/748,240

Filing Date: December 31, 2003

For: SELF-CLEANING METHOD FOR  
SEMICONDUCTOR EXPOSURE  
APPARATUS

Atty. Dkt.: OKI 395

**RESPONSE**

**Mail Stop AFTER FINAL Amendment**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Action mailed on April 25, 2005, please consider the following remarks:

The Applicants' claims recite "bracelet-shaped concave lenses concentrically arranged" (i.e., a Fresnel lens) on one side of a transmittal plate and, on the other side, either a convex or concave lens surface; the subject matter is exemplified in Figs. 3B and 6B.

The Mori reference discloses various embodiments of transmittal plate, including (in a first embodiment) concave/convex surfaces, and (in a second embodiment) a "diffusion plate" that is "etched" on just one side, in one of two disclosed etching patterns, a diffraction grating pattern or a pattern that is "random to scatter light" (col. 11, lines 1-2).

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(1) The Applicants respectfully suggest that “bracelet-shaped concave *lenses*” are not disclosed by Mori, because an etched random pattern is certainly not a set of lenses, and, furthermore, a diffraction grating is not a set of lenses. If a Fresnel lens is made finer and finer, until the width of the rings approaches the wavelength of light, it will begin to act as a diffraction grating. But as it does, it will cease to be a lens, because it will not continue to *bend* light by refraction, but instead will *scatter* it by diffraction. The action of a diffraction grating depends entirely on the scattering of light, from line structures that are too narrow to act like lenses and cannot possibly do so (even if they happen to be lens-shaped).

The *shape* of diffraction grating lines has no effect on the direction that light is diffracted, and only influences the proportion of light in the various orders.<sup>1</sup> This is directly contrary to the Applicants' Fresnel lens, in which the shape is paramount and the spacing of the lens rings is unimportant, as long as the spacing is large enough not to scatter too much light.

Therefore, even if the person of ordinary skill had combined Mori's surface 72s and the lens surface (not admitted), the combination would not have reached the instant claims.

(2) The Examiner's position is understood to be this: since the Mori reference discloses (in a first embodiment) concave/convex surfaces, and (in a second embodiment) the “diffusion plate,” it follows that a combination of these is suggested. As the Examiner states, “The issue here is whether one of ordinary skill in the art ... would have modified the teachings of Mori to come up with the applicant's invention,” i.e., to combine the two embodiments.

The Applicants respectfully propose that Mori does not suggest mixing and matching its embodiments, as the Examiner asserts. Mori presents these two embodiments as separate,

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<sup>1</sup> The Examiner is invited to consider the attached pages from a physics textbook (Hardy and Perrin), and to note the statement at the top of page 562, that “any sort of periodic structure” can act as a diffraction grating (i.e., not just a lens-shaped structure), and the statement at line 25 on the same page, that “the only effect of the form of the ruling is to vary the distribution of light among the various orders of the spectra.”

independent—and completely satisfactory—alternatives. If the two embodiments were disclosed in two separate references, then there would need to be some *reason* to combine the references, and not just the mere possibility of combining them.<sup>2</sup> In this case, there likewise must be motivation for combining the embodiments. The Applicants respectfully point out that the Examiner has presented no specific advantage that would have motivated the person of ordinary skill to put a lens shape on one side and a diffraction grating on the other side.

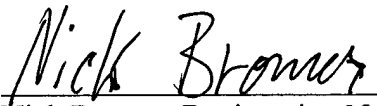
(3) Since the Applicant's transmittable plate has two different surfaces, the plate can be thinner than the transmittable plate shown in Mori. See lines 1-3, page 12 of the specification, for example. But Mori does not suggest making the plate thinner; and as noted above, Mori presents no other motivation for combining its embodiments.

(4) The Examiner on page 3, line 7, underlines “lens and the like.” Clarification is requested as to intent and meaning of the underlining.

Withdrawal of the rejection is requested.

Respectfully submitted,

May 31, 2005  
Date

  
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<sup>2</sup> The former is motivation, that latter is expectation of success. These are distinct elements. Both are required under MPEP §§ 2142-2143.